

# **DRAFT APPENDIX 1 - Core Elements for New Development and Redevelopment**

## **Section 1. Exemptions**

Unless otherwise indicated in this section, the practices described in this section are exempt from the Core Elements, even if such practices meet the definition of new development or redevelopment.

### ***Forest Practices***

Forest practices regulated under Title 222 WAC, except for Class IV-General forest practices that are conversions from timberland to other uses, are exempt from the provisions of the Core Elements.

### ***Commercial Agriculture***

Commercial agriculture practices involving working the land for production are generally exempt. However, the conversion from timberland to agriculture, and the construction of impervious surfaces are not exempt.

### ***Oil and Gas Field Activities or Operations***

Construction of drilling sites, waste management pits, and access roads, as well as construction of transportation and treatment infrastructure such as pipelines, natural gas treatment plants, natural gas pipeline compressor stations, and crude oil pumping stations are exempt. Operators are encouraged to implement and maintain Best Management Practices (BMPs) to minimize erosion and control sediment during and after construction activities to help ensure protection of surface water quality during storm events.

### ***Pavement Maintenance Projects***

A preservation or maintenance project is defined as preserving/protecting infrastructure by rehabilitating or replacing existing structures to maintain operational and structural integrity, and for the safe and efficient operation of the facility. Pavement maintenance projects do not increase the traffic capacity of a roadway or parking area.

The exemptions described below may only be applied to an entire project. The entire project must be for the sole purpose of maintaining a pavement area. Pavement maintenance projects do not involve redevelopment work beyond the pavement maintenance. Pavement maintenance projects do not change the characteristics of a roadway (e.g. changing a four-way intersection to a roundabout is not a pavement maintenance project). Projects that are not solely for pavement maintenance work are not exempt from the Core Elements and must consider any pavement maintenance

areas within the project as new or replaced hard surfaces when determining the applicable Core Elements.

The following pavement maintenance projects are exempt from all Core Elements:

- pothole and square cut patching,
- overlaying existing asphalt or concrete pavement with bituminous surface treatment (BST or “chip seal”), asphalt, or concrete without expanding the area of coverage,
- shoulder grading,
- reshaping/regrading drainage systems,
- crack sealing, and
- vegetation maintenance.

The following pavement maintenance projects are subject to only 4.1 Core Element #1: Preparation of a Stormwater Site Plan and 4.2 Core Element #2: Construction Stormwater Pollution Prevention Plan (SWPPP):

- Removing and replacing a concrete or asphalt roadway to base course or subgrade or lower without expanding the impervious surfaces.
- Repairing the roadway base or subgrade.
- Overlaying existing gravel with bituminous surface treatment (BST or “chip seal”), asphalt, or concrete without expanding the area of coverage, or overlaying BST with asphalt, without expanding the area of coverage. For this type of project, this partial exemption applies under the following conditions only:
  - For roads, these practices are exempt from additional Core Elements only if the traffic surface will be subject to an average daily traffic (ADT) volume of < 7,500 on an urban road or an ADT volume of < 15,000 vehicles on a rural road, freeway, or limited access control highway. If these thresholds are exceeded, these are considered new hard surfaces.
  - For parking areas, these practices are exempt from additional Core Elements only if the traffic surface will be subject to < 40 trip ends per 1,000 square feet of building area or 100 total trip ends. If either of these thresholds is exceeded, these are considered new hard surfaces.

### ***Underground Utility Projects***

This exemption may only be applied to an entire project. The entire project must be for the sole purpose of installing, maintaining, and/or upgrading an underground utility, involving only the trenching necessary for the underground utility work (including any over-excavating necessary for the utility trench). Underground utility projects do not involve redevelopment work beyond the utility work. Projects that are not solely for underground utility work are not exempt from the Core Elements and must consider any underground utility work areas within the project as new or replaced hard surfaces when determining the applicable Core Elements.

Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics are only subject to 4.1 Core Element #1: Preparation of a Stormwater Site Plan and 4.2 Core Element #2: Construction Stormwater Pollution Prevention Plan (SWPPP).

## **Section 2. Definitions Related to Core Elements**

### ***AADT***

Annual Average Daily Traffic

### ***Arterial***

A road or street primarily for through traffic. The term generally includes roads or streets considered collectors. It does not include local access roads which are generally limited to providing access to abutting property. See also RCW 35.78.010, RCW 36.86.070, and RCW 47.05.021.

### ***Bioretention BMPs***

Engineered stormwater facilities that provide Runoff Treatment by passing the stormwater through a specified soil profile (Bioretention Soil Mix, or BSM), and either retain or detain the treated stormwater for Flow Control. Bioretention facilities include a variety of plant material including trees, shrubs, grasses, and/or other herbaceous plants adapted to the local climate and soil moisture conditions. Bioretention is typically implemented as an LID practice, and as such is typically sited to receive stormwater runoff from a small contributing area.

### ***Certified Erosion and Sediment Control Lead (CESCL)***

An individual who has current certification through an approved erosion and sediment control training program that meets the minimum training standards established by Ecology (see BMP C160: Certified Erosion and Sediment Control Lead). A CESCL is knowledgeable in the principles and practices of erosion and sediment control. The CESCL must have the skills to assess site conditions and construction activities that could impact the quality of stormwater and, the effectiveness of erosion and sediment control measures used to control the quality

of stormwater discharges. Certification is obtained through an Ecology approved erosion and sediment control course. Course listings are provided online at Ecology's website.

### ***Commercial agriculture***

Those activities conducted on lands defined in RCW 84.34.020(2), and activities involved in the production of crops or livestock for commercial trade. An activity ceases to be considered commercial agriculture when the area on which it is conducted is proposed for conversion to a nonagricultural use or has lain idle for more than five years, unless the idle land is registered in a federal or state soils conservation program, or unless the activity is maintenance of irrigation ditches, laterals, canals, or drainage ditches related to an existing and ongoing agricultural activity.

### ***Converted vegetation (areas)***

The surfaces on a project site where native vegetation, pasture, scrub/shrub, or unmaintained non-native vegetation (e.g., Himalayan blackberry, scotch broom) are converted to lawn or landscaped areas, or where native vegetation is converted to pasture.

### ***Effective impervious surface***

Those impervious surfaces that are connected via sheet flow or discrete conveyance to a drainage system. Impervious surfaces are considered ineffective if:

1. the runoff is fully dispersed in accordance with BMP F6.42: Full Dispersion;
2. residential roof runoff is infiltrated in accordance with BMP T5.10A: Downspout Full Infiltration; or
3. all runoff from the impervious surface is infiltrated (i.e. calculations show that the 100-yr, 3-hr storm OR the 100-yr, 72-hr storm, whichever is larger, is fully infiltrated).

### ***Erodible or leachable materials***

Wastes, chemicals, or other substances that measurably alter the physical or chemical characteristics of runoff when exposed to rainfall. Examples include erodible soils that are stockpiled, uncovered process wastes, manure, fertilizers, oily substances, ashes, kiln dust, and garbage dumpster leakage.

### ***Hard surface***

An impervious surface, a permeable pavement, or a vegetated roof.

### ***Highway***

A main public road connecting towns and cities.

***Impervious surface***

A hard surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater.

For purposes of determining whether the thresholds for application of Core Elements are exceeded, open, uncovered retention or detention BMPs shall not be considered as impervious surfaces. Open, uncovered retention or detention BMPs shall be considered impervious surfaces for the purposes of runoff modeling.

***Land disturbing activity***

Any activity that results in movement of earth or a change in the existing soil cover (both vegetative and nonvegetative) and/or the existing soil topography. Land disturbing activities include, but are not limited to clearing, grading, filling, and excavation. Compaction that is associated with stabilization of structures and road construction shall also be considered a land disturbing activity. Vegetation maintenance practices, including landscape maintenance and gardening, are not considered land-disturbing activity. Stormwater facility maintenance is not considered land disturbing activity if conducted according to established standards and procedures.

***Low impact development (LID)***

A stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation, and transpiration by emphasizing conservation, use of on-site natural features, site planning, and distributed stormwater management practices that are integrated into a project design.

***Low Impact Development Best Management Practices (LID BMPs)***

Distributed stormwater management practices, integrated into a project design, that emphasize pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration.

***Low Impact Development (LID) Principles***

Land use management strategies that emphasize conservation, use of on-site natural features, and site planning to minimize impervious surfaces, native vegetation loss, and stormwater runoff.

### ***Maintenance***

Repair and maintenance includes activities conducted on currently serviceable structures, facilities, and equipment that involves no expansion or use beyond that previously existing and results in no significant adverse hydrologic impact. It includes those usual activities taken to prevent a decline, lapse, or cessation in the use of structures and systems. Those usual activities may include replacement of dysfunctional facilities, including cases where environmental permits require replacing an existing structure with a different type of structure, as long as the functioning characteristics of the original structure are not changed. One example is the replacement of a collapsed, fish blocking, round culvert with a new box culvert under the same span, or width, of roadway. In regard to stormwater facilities, maintenance includes assessment to ensure ongoing proper operation, removal of built-up pollutants (i.e. sediments), replacement of failed or failing treatment media, and other actions taken to correct defects as identified in the BMP design guidance within Chapter 6 of the SWMMEW. See also Pavement Maintenance exemptions in Section 1. Exemptions.

### ***Native vegetation***

Vegetation comprising plant species that are indigenous to eastern Washington and that reasonably could be expected to naturally occur on the site. Plant species classified as noxious weeds are excluded from this definition.

### ***New development***

Land disturbing activities, including Class IV-general forest practices that are conversions from timberland to other uses; structural development, including construction or installation of a building or other structure; creation of hard surfaces; and subdivision, short subdivision and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development.

### ***New impervious surface***

A surface that is:

- changed from a previous surface to an impervious surface (e.g. resurfacing by upgrading from dirt to gravel, a bituminous surface treatment (“chip seal”), asphalt, concrete, or an impervious structure); or
- upgraded from gravel to chip seal, asphalt, concrete, or an impervious structure; or
- upgraded from chip seal to asphalt, concrete, or an impervious structure.

Note that if asphalt or concrete has been overlaid by a chip seal, the existing condition should be considered as asphalt or concrete.

### ***On-site stormwater management BMPs***

Development and mitigation techniques that serve to infiltrate, disperse, and retain stormwater runoff on a project site. As used in this appendix, a synonym for Low Impact Development BMPs.

### ***Permeable pavement***

Pervious concrete, porous asphalt, permeable pavers, or other forms of pervious or porous paving material intended to allow passage of water through the pavement section. It often includes an aggregate base that provides structural support and acts as a stormwater reservoir.

### ***Pervious surface***

Any surface material that allows stormwater to infiltrate into the ground. Examples include lawn, landscape, pasture, native vegetation areas, and permeable pavements.

### ***Pollution-generating hard surface (PGHS)***

Those hard surfaces considered to be a significant source of pollutants in stormwater runoff. See the listing of surfaces under pollution-generating impervious surface.

### ***Pollution-generating impervious surface (PGIS)***

Those impervious surfaces considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those which are subject to any of the following:

- vehicular use (as further defined in this glossary).
- industrial activities (as further defined in the glossary of the SWMMEW).
- storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall.

- metal roofs unless they are coated with an inert, non-leachable material (e.g., baked-on enamel coating).
- roofs that are subject to venting significant amounts of dusts, mists, or fumes from manufacturing, commercial (such as restaurants or processing facilities where oils and other solid particles are expected to be expelled ), or other indoor activities.

***Pollution-generating pervious surface (PGPS)***

Any pervious surface subject to any of the following:

- vehicular use (as further defined in this glossary).
- industrial activities (as further defined in the glossary of the SWMMEW).
- storage of erodible or leachable materials, wastes or chemicals, and that receive direct rainfall or run-on or blow-in of rainfall.
- use of pesticides and fertilizers.
- loss of soil.

Typical PGPS include permeable pavement subject to vehicular use, lawns and landscaped areas including: golf courses, parks, cemeteries, and sports fields (natural and artificial turf).

***Pre-developed condition***

The native vegetation and soils that existed at a site prior to the influence of Euro-American settlement. Jurisdictions may choose to require that either the predeveloped condition or the “existing condition” be used to calculate runoff volumes to be compared to the runoff generated under the “proposed development condition.” Because there is limited information available to identify and confirm actual predeveloped conditions for many areas of eastern Washington, jurisdictions may choose to apply a reasonably determined set of conservative curve numbers for use in determining the runoff volume compared to that under the proposed development condition.

***Project***

Any proposed action to alter or develop a site; or the proposed action of a permit application or an approval that requires drainage review.

***Project site***

That portion of a property, properties, or right-of-way subject to land disturbing activities, new hard surfaces, or replaced hard surfaces.



### ***Rain garden***

A non-engineered shallow landscaped depression, with compost-amended native soils and adapted plants. The depression is designed to pond and temporarily store stormwater runoff from adjacent areas, and to allow stormwater to pass through the amended soil profile. See BMP T5.14: Rain Gardens.

### ***Redevelopment***

On a site that is already substantially developed (i.e. has 35% or more of existing hard surface coverage), the creation or addition of hard surfaces; the expansion of a building footprint or addition or replacement of a structure; structural development including construction, installation or expansion of a building or other structure; replacement of hard surface that is not part of a routine maintenance activity; and land disturbing activities.

### ***Replaced hard surface***

For structures, the removal down to (i.e. exposing the top of) the foundation and replacement. For other hard surfaces, the removal down to (i.e. exposing the top of) bare soil or base course and replacement.

### ***Replaced impervious surface***

For structures, the removal down to (i.e. exposing the top of) the foundation and replacement. For other impervious surfaces, the removal down to (i.e. exposing the top of) bare soil or base course and replacement.

### ***Site***

The area defined by the legal boundaries of a parcel or parcels of land that is (are) subject to new development or redevelopment. For road projects, the length of the project site and the right-of-way boundaries define the site.

### ***Source control BMP***

A structure or operation intended to prevent pollutants from coming into contact with stormwater through physical separation of areas or careful management of activities that are sources of pollutants. The SWMMWW separates source control BMPs into two types: structural and operational.

- *Structural Source Control BMPs* are physical, structural, or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater.
- *Operational Source Control BMPs* are non-structural practices that prevent or reduce pollutants from entering stormwater.

### ***Vehicular use***

Regular use of an impervious or pervious surface by motor vehicles. The following are subject to regular vehicular use:

- roads,
- un-vegetated road shoulders,
- bike lanes within the traveled lane of a roadway,
- driveways,
- parking lots,
- unrestricted access fire lanes,
- vehicular equipment storage yards,
- light rail elevated and non-elevated guideways/tracks, and
- airport runways.

The following are not considered subject to regular vehicular use:

- sidewalks not subject to drainage from roads for motor vehicles,
- paved bicycle pathways separated from and not subject to drainage from roads for motor vehicles,
- restricted access fire lanes, and
- infrequently used maintenance access roads.

### ***Wetlands***

Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.

## Section 3. Applicability of the Core Elements

### 3.1 Core Element Thresholds

Not all of the Core Elements apply to every new development or redevelopment project. The applicability varies depending on the project type and size. This section identifies thresholds that determine the applicability of the Core Elements to projects. Use the flow charts in Figure 1: Flow Chart for Determining Whether the Permittee Must Regulate the Project, Figure 2: Flow Chart for Determining Requirements for New Development, and Figure 3: Flow Chart for Determining Requirements for Redevelopment to determine which of the Core Elements apply. The Core Elements themselves are presented in Section 4. Core Elements.

Use the thresholds in sections 3.2 and 3.3 at the time of application for a subdivision, plat, short plat, building permit, or other construction permit. The plat or short plat approval shall identify all stormwater BMPs that are required for each lot. For projects involving only land disturbing activities, (e.g. clearing or grading), the thresholds apply at the time of application for the permit allowing or authorizing that activity. Note the exemption in Section 1. Exemptions for forest practices other than Class IV General.

For projects that are implemented in incremental stages or phases as part of a common plan of development or sale, the thresholds below must be considered for the complete project at full build-out.

Figure 1: Flow Chart for Determining Whether the Permittee Must Regulate the Project

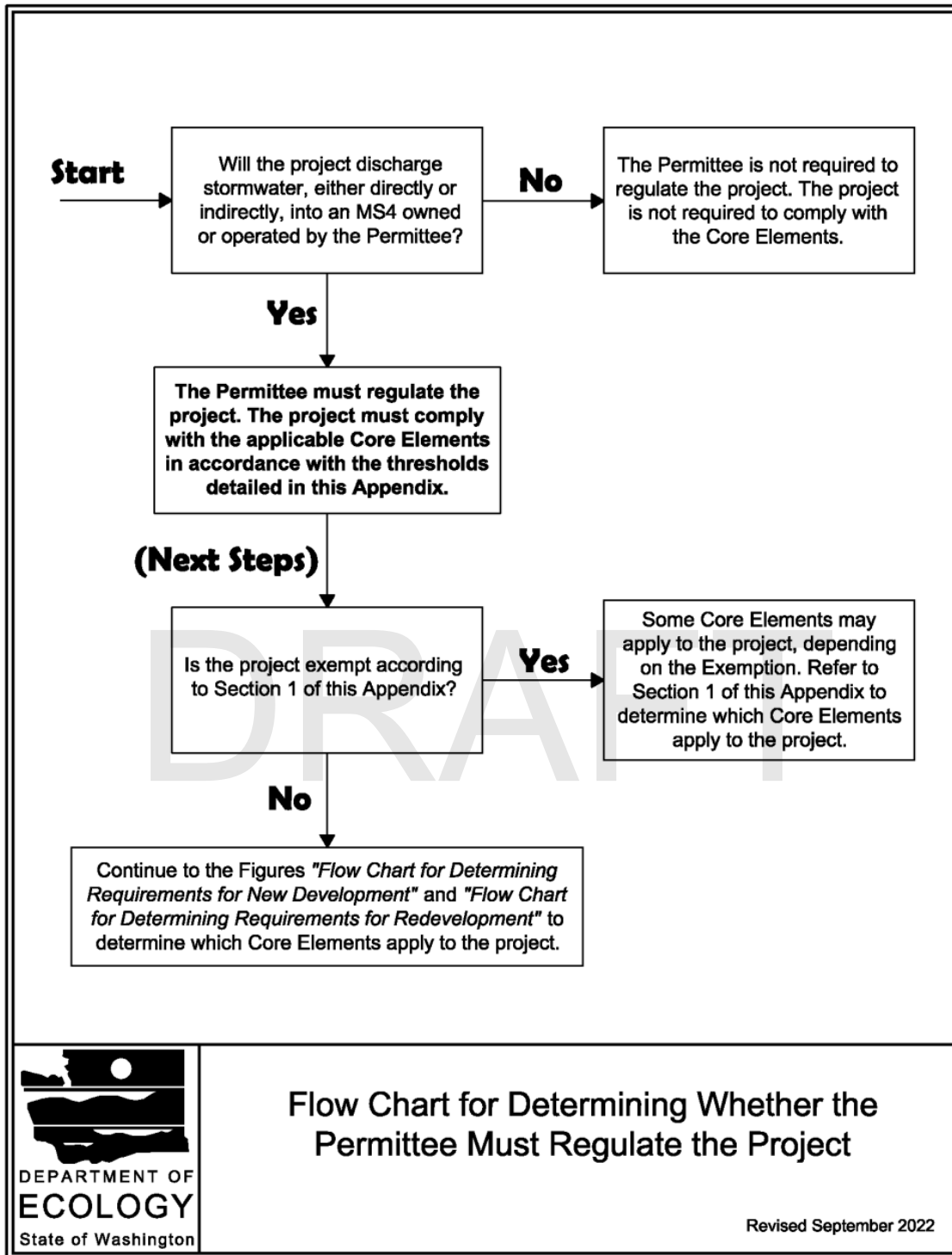


Figure 2: Flow Chart for Determining Requirements for New Development

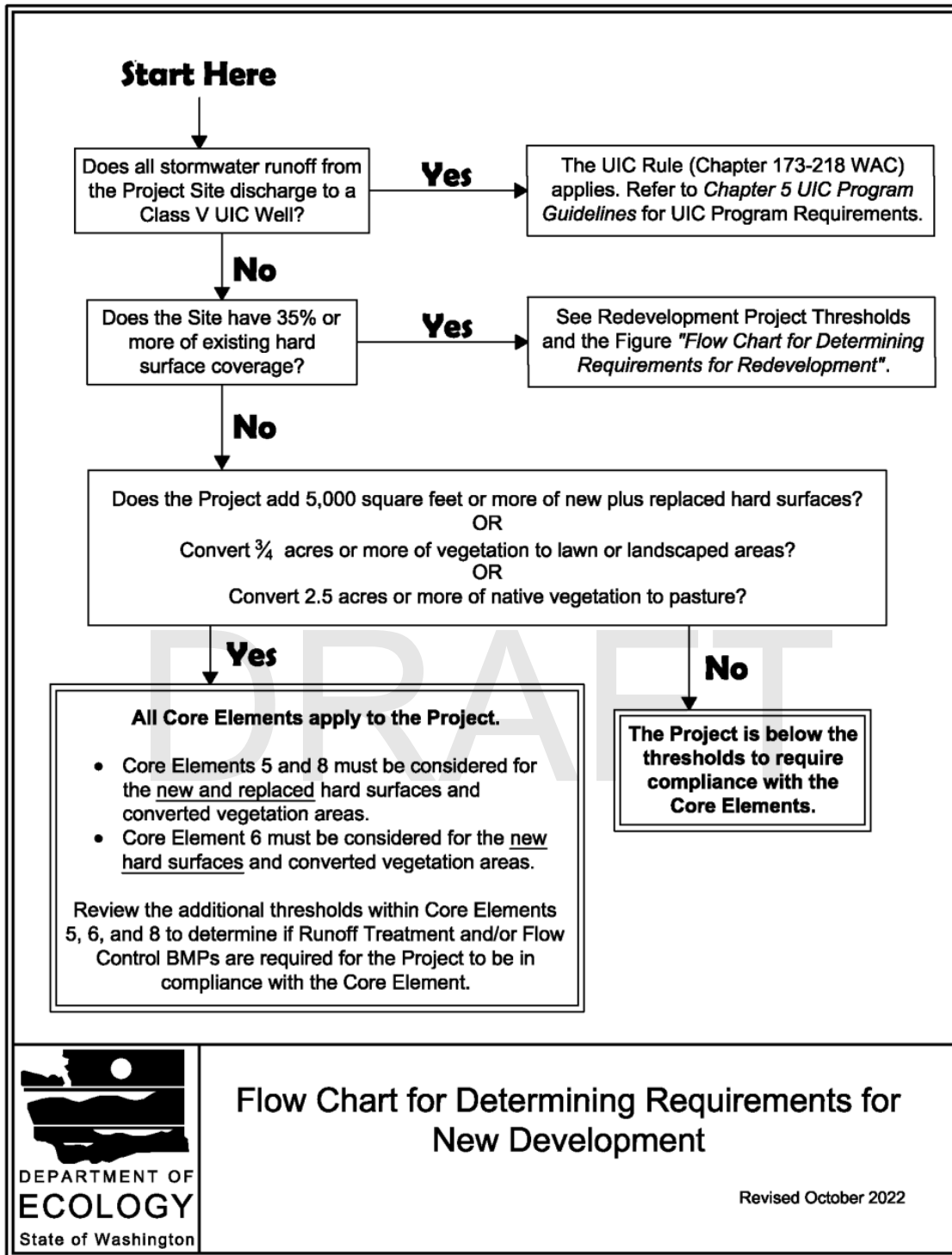
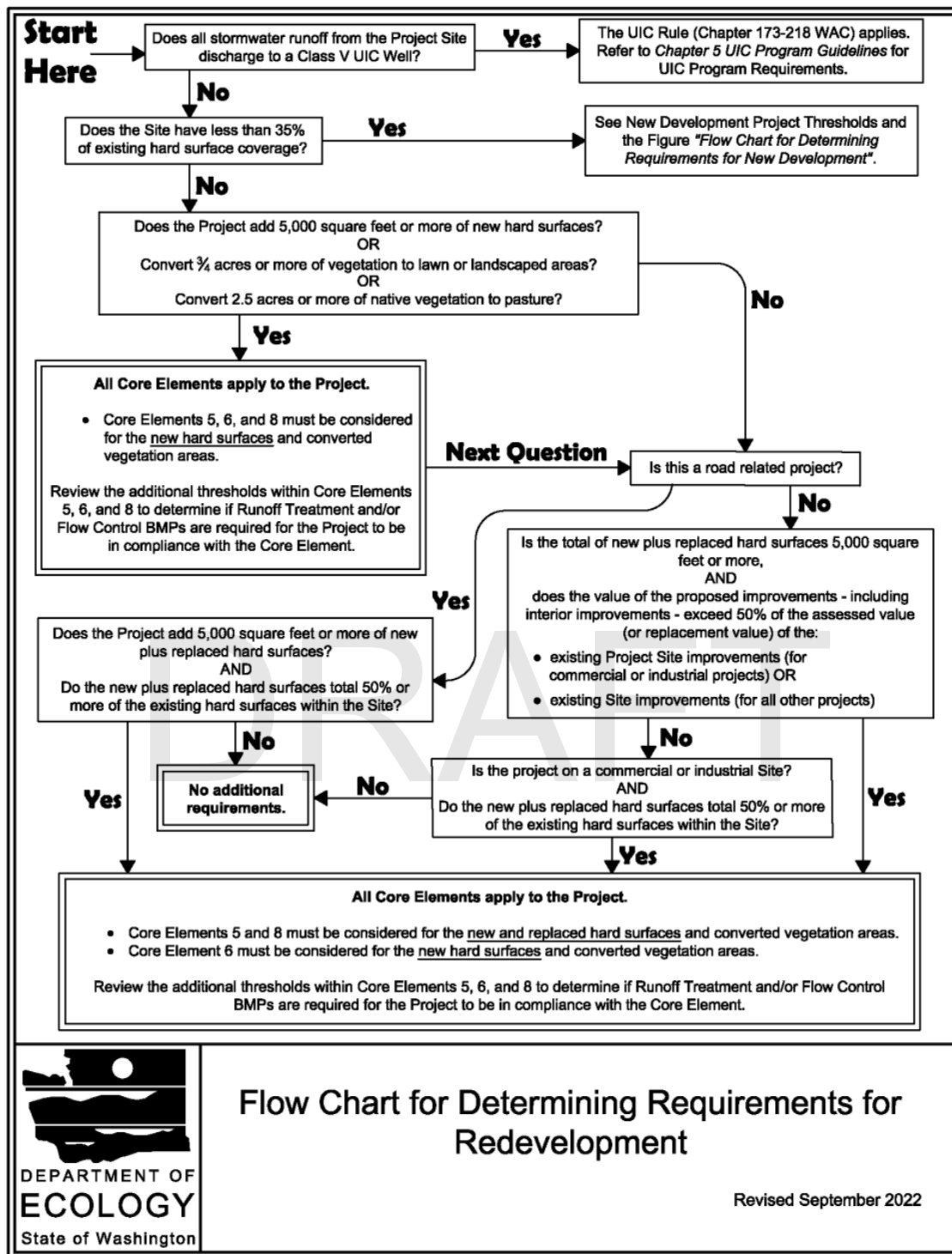


Figure 3: Flow Chart for Determining Requirements for Redevelopment



### 3.2 New Development Project Thresholds

The following new development shall comply with all Core Elements. Core Elements 5 and 8 must be considered for (i.e. the Core Element Thresholds must be evaluated for) the new and replaced hard surfaces and converted vegetation areas. Core Element 6 must be considered for the new hard surfaces and converted vegetation areas.

- Results in 5,000 square feet, or more, of new plus replaced hard surface area, or
- Converts  $\frac{3}{4}$  acres, or more, of vegetation to lawn or landscaped areas, or
- Converts 2.5 acres, or more, of native vegetation to pasture.

### 3.3 Redevelopment Project Thresholds

The following redevelopment shall comply with all Core Elements. Core Elements 5, 6, and 8 must be considered for (i.e. the Core Element Thresholds must be evaluated for) the new hard surfaces and converted vegetation areas.

- Adds 5,000 square feet or more of new hard surfaces or,
- Converts  $\frac{3}{4}$  acres, or more, of vegetation to lawn or landscaped areas, or
- Converts 2.5 acres, or more, of native vegetation to pasture.

### 3.4 Additional Requirements for Redevelopment

Road-related redevelopment projects shall comply with all Core Elements if they meet both of the following thresholds. If the following thresholds are met, Core Elements 5 and 8 must be considered for (i.e. the Core Element Thresholds must be evaluated for) the new and replaced hard surfaces and converted vegetation areas. Core Element 6 must be considered for the new hard surfaces and converted vegetation areas.

- the new plus replaced hard surfaces total 5,000 square feet or more, and
- the new plus replaced hard surfaces total 50% or more of the existing hard surfaces within the Site.

Other types of redevelopment projects shall comply with all Core Elements if they meet either of the following two thresholds. If either of the following thresholds are met, Core Elements 5 and 8 must be considered for (i.e. the Core Element Thresholds must be evaluated for) the new and replaced hard surfaces and converted vegetation areas. Core Element 6 must be considered for the new hard surfaces and converted vegetation areas.

- Threshold 1:
  - the total of new plus replaced hard surfaces is 5,000 square feet or more, and

- For commercial or industrial projects: the valuation of the proposed improvements, including interior improvements, exceeds 50% of the assessed value of the existing Project Site improvements.
- For all other projects: the valuation of the proposed improvements, including interior improvements, exceeds 50% of the assessed value of the existing Site improvements.
- Threshold 2 (for commercial or industrial sites only):
  - the new plus replaced hard surfaces total 50% or more of the existing hard surfaces within the Site.

The local jurisdiction may exempt or institute a stop-loss provision for redevelopment projects from compliance with Core Elements #5, #6, and/or #8 as applied to the replaced hard surfaces if the local jurisdiction has adopted a plan and a schedule that fulfills those requirements in regional facilities.

## Section 4. Core Elements

This Section describes the Core Elements for stormwater management at new development and redevelopment sites. Section 3. Applicability of the Core Elements should be consulted to determine which of the Core Elements apply to any given project. Figure 2: Flow Chart for Determining Requirements for New Development and Figure 3: Flow Chart for Determining Requirements for Redevelopment should be consulted to determine whether the Core Elements apply to new surfaces, replaced surfaces, or new and replaced surfaces.

### 4.1 Core Element #1: Preparation of a Stormwater Site Plan

All projects meeting the thresholds in Section 3. Applicability of the Core Elements shall prepare a Stormwater Site Plan for local government review. Stormwater Site Plans shall use site-appropriate development principles, as required and encouraged by local development codes, to retain native vegetation and minimize impervious surfaces to the extent feasible. Stormwater Site Plans shall be prepared in accordance with the guidance in Chapter 3 in the SWMMEW.

### 4.2 Core Element #2: Construction Stormwater Pollution Prevention Plan (SWPPP)

Permittees may choose to allow compliance with this Core Element to be achieved for an individual site if the site is covered under and fully implementing the requirements of Ecology's *CONSTRUCTION STORMWATER GENERAL PERMIT - National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activity*. Permittees remain responsible for site inspection and enforcement of the requirements, to ensure that



construction operators follow their SWPPPs in accordance with Local Jurisdiction regulations.

Local jurisdictions may choose to allow site operators to apply an Erosivity Waiver to projects disturbing less than five acres that meet the Erosivity Waiver requirements (below); such projects would be waived by the requirement that the jurisdiction review site plans for construction phase stormwater pollution prevention.

All new development and redevelopment projects are responsible for preventing erosion and discharge of sediment and other pollutants into receiving waters.

All projects meeting the thresholds in Section 3. Applicability of the Core Elements and not qualifying for an Erosivity Waiver (as described below, if allowed by the Local Jurisdiction), shall prepare a Construction Stormwater Pollution Prevention Plan (SWPPP) as part of the Stormwater Site Plan for local government review.

Projects below those thresholds are not required to prepare a Construction SWPPP, but must consider all of the Construction SWPPP Elements (listed below) and develop controls for all Construction SWPPP Elements that pertain to the project site.

The Permittee may develop an abbreviated Construction SWPPP format to meet the Construction SWPPP requirement under this permit for project sites that will disturb less than 1 acre.

### **General Requirements**

The Construction SWPPP shall include a narrative and drawings. All BMPs shall be clearly referenced in the narrative and marked on the drawings. The Construction SWPPP narrative shall include documentation to explain and justify the pollution prevention decisions made for the project. Each of the 13 Construction SWPPP Elements (listed below) must be considered and included in the Construction SWPPP unless site conditions render the Element unnecessary and the exemption from that Element is clearly justified in the narrative of the SWPPP.

Clearing and grading activities for developments shall be permitted only if conducted pursuant to an approved site development plan (e.g. subdivision approval) that establishes permitted areas of clearing, grading, cutting, and filling. These permitted clearing and grading areas and any other areas required to preserve critical or sensitive areas, buffers, native growth protection easements, or tree retention areas (as may be required by local jurisdictions), shall be delineated on the site plans and the development site.

The Construction SWPPP shall be implemented beginning with initial land disturbance and until final stabilization. Sediment and Erosion control BMPs shall be consistent with the BMPs contained in Chapter 7 in the SWMMEW.

Seasonal Work Limitations: From October 1 through June 30, clearing, grading, and other soil disturbing activities shall only be permitted if shown to the satisfaction of the local permitting authority that silt-laden runoff will be prevented from leaving the site through a combination of the following:

1. Site conditions including existing vegetative coverage, slope, soil type and proximity to receiving waters; and
2. Limitations on activities and the extent of disturbed areas; and
3. Proposed erosion and sediment control measures.

Based on the information provided and/or local weather conditions, the local permitting authority may expand or restrict the seasonal limitation on site disturbance.

The following activities are exempt from the seasonal clearing and grading limitations:

1. Routine maintenance and necessary repair of erosion and sediment control BMPs,
2. Routine maintenance of public facilities or existing utility structures that do not expose the soil or result in the removal of the vegetative cover to soil, and
3. Activities where there is one hundred percent infiltration of stormwater runoff within the site in approved and installed erosion and sediment control facilities.

If erosion and sediment control requirements are not being met (i.e. sediment-laden water is leaving the site), then the local jurisdiction shall require that the contractor maintain the existing BMPs or implement other BMPs as appropriate.

### ***Erosivity Waiver***

The Local Jurisdiction may allow construction site operators to qualify for a waiver from the requirement to submit a SWPPP for Local Jurisdiction review if all of the following conditions are met:

1. The site will result in the disturbance of less than 5 acres, and the site is not part of a common plan of development or sale that will disturb 5 acres or greater.
  - a. The project's rainfall erosivity factor ("R" Factor) is less than 5 during the period of construction activity, as calculated using the Texas A&M University online rainfall erosivity calculator. The period of construction activity begins at initial earth disturbance and ends with final stabilization.
  - b. The entire period of construction activity falls within the following timeframe(s):
    - June 15 through October 15 for sites with mean annual precipitation of 12 inches or more; **or**
    - No additional timeframe restrictions apply for sites with mean annual precipitation of less than 12 inches.

2. The site or facility has not been declared a significant contributor of pollutants.
3. There are no planned construction activities at the site that will result in non-stormwater discharges.
  - The waiver is allowed by the Local Jurisdiction.
4. The construction site operator notifies the Local Jurisdiction of the intention to apply this waiver at least one week prior to commencing land disturbing activities. The notification must include a summary of the project information used in calculating the project's rainfall erosivity factor (see #2 above) and a certified statement that:
  - The operator will comply with applicable local stormwater requirements; and
  - The operator will implement appropriate erosion and sediment control BMPs to prevent violations of water quality standards.

### ***Construction SWPPP Elements***

#### **Element 1: Preserve Vegetation / Mark Clearing Limits**

- a. Before beginning land disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.
- b. Retain the duff layer, native topsoil, and natural vegetation in an undisturbed state to the maximum degree practicable.

#### **Element 2: Establish Construction Access**

- a. Limit construction vehicle access and exit to one route, if possible.
- b. Stabilize access points with a pad of quarry spalls, crushed rock, or other equivalent BMPs, to minimize tracking of sediment onto roads.
- c. Locate wheel wash or tire baths on site, if the stabilized construction entrance is not effective in preventing tracking sediment onto roads.
- d. If sediment is tracked off site, clean the affected roadway(s) thoroughly at the end of each day, or more frequently as necessary (for example, during wet weather). Remove sediment from roads by shoveling, sweeping, or picking up and transporting the sediment to a controlled sediment disposal area.
- e. Conduct street washing only after sediment is removed in accordance with 2.d (above).
- f. Control street wash wastewater by pumping back on site, or otherwise prevent it from discharging into systems tributary to waters of the State.

### **Element 3: Control Flow Rates**

- a. Protect properties and waterways downstream of construction sites from erosion and the associated discharge of turbid waters due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site.
- b. Where necessary to comply with 3.a (above), construct stormwater infiltration or detention BMPs as one of the first steps in grading. Assure that detention BMPs function properly before constructing site improvements (e.g. impervious surfaces).
- c. If permanent infiltration BMPs are used for temporary flow control during construction, protect these BMPs from sedimentation during the construction phase.

### **Element 4: Install Sediment Controls**

Design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum:

- a. Construct sediment control BMPs (sediment ponds, traps, filters, etc.) as one of the first steps in grading. These BMPs must be functional before other land disturbing activities take place.
- b. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.
- c. Direct stormwater runoff from disturbed areas through BMP C241: Sediment Pond (Temporary) or other appropriate sediment removal BMP, before the runoff leaves a construction site or before discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must control flow rates per Element 3: Control Flow Rates.
- d. Locate BMPs intended to trap sediment on site in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.
- e. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible.
- f. Where feasible, design outlet structures that withdraw impounded stormwater from the surface to avoid discharging sediment that is still suspended lower in the water column.

### **Element 5: Stabilize Soils**

- a. Stabilize exposed and unworked soils by application of effective BMPs that prevent erosion. Applicable BMPs include, but are not limited to: temporary and permanent seeding, sodding, mulching, plastic covering, erosion control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base on areas to be paved, and dust control.
- b. Control stormwater volume and velocity within the site to minimize soil erosion.
- c. Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.
- d. Soils must not remain exposed and unworked for more than the time periods set forth below to prevent erosion:
  - **All of eastern Washington, except for the Central Basin:**
    - During the dry season (July 1 - September 30): 10 days
    - During the wet season (October 1 - June 30): 5 days
  - **The Central Basin:**
    - During the dry season (July 1 - September 30): 30 days
    - During the wet season (October 1 - June 30): 15 days
- e. Stabilize soils at the end of the shift before a holiday or weekend if needed based on the weather forecast.
- f. Stabilize soil stockpiles from erosion, protect with sediment trapping measures, and where possible, locate away from storm drain inlets, waterways and drainage channels.
- g. Minimize the amount of soil exposed during construction activity.
- h. Minimize the disturbance of steep slopes.
- i. Minimize soil compaction and, unless infeasible, preserve topsoil.

### **Element 6: Protect Slopes**

- a. Design and construct cut-and-fill slopes in a manner to minimize erosion. Applicable practices include, but are not limited to, reducing continuous length of slope with terracing and diversions, reducing slope steepness, and roughening slope surfaces (for example, track walking).
- b. Divert off-site stormwater (run-on) or groundwater away from slopes and disturbed areas with interceptor dikes, pipes and/or swales. Off-site stormwater should be managed separately from stormwater generated on site.

- c. At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion. Temporary pipe slope drains must be sized to convey the flow rate calculated by the following method:
  - **All of eastern Washington:** The expected peak flow rate from a 6-month, 3-hour storm for the developed condition (referred to as the short-duration storm).
- d. Place excavated material on the uphill side of trenches, consistent with safety and space considerations.
- e. Place check dams at regular intervals within constructed channels that are cut down a slope.

#### **Element 7: Protect Drain Inlets**

- a. Protect all storm drain inlets made operable during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.
- b. Clean or remove and replace inlet protection devices when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).

#### **Element 8: Stabilize Channels and Outlets**

- a. Design, construct, and stabilize all on-site conveyance channels to prevent erosion from the flow rate calculated by the following method:
  - **All of eastern Washington:** The expected peak flow rate from a 6-month, 3-hour storm for the developed condition (referred to as the short-duration storm).
- b. Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream reaches at the outlets of all conveyance systems.

#### **Element 9: Control Pollutants**

Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants. The project proponent must:

- a. Handle and dispose of all pollutants, including waste materials and demolition debris that occur on site in a manner that does not cause contamination of stormwater.
- b. Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. Minimize storage of hazardous materials on-site. Safety Data Sheets (SDS) should be supplied for all

materials stored. Chemicals should be kept in their original labeled containers. On-site fueling tanks must include secondary containment. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume of the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.

- c. Conduct maintenance, fueling, and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.
- d. Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, or to the sanitary sewer, with local sewer district approval.
- e. Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturers' label requirements for application rates and procedures.
- f. Use BMPs to prevent contamination of stormwater runoff by pH-modifying sources. The sources for this contamination include, but are not limited to: bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, recycled concrete stockpiles, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters.
- g. Adjust the pH of stormwater if necessary to prevent violations of water quality standards.
- h. Assure that washout of concrete trucks is performed off-site or in designated concrete washout areas only. Do not wash out concrete truck drums onto the ground, or into storm drains, open ditches, streets, or streams. Washout of small concrete handling equipment may be disposed of in a formed area awaiting concrete where it will not contaminate surface or groundwater. Do not dump excess concrete on site, except in designated concrete washout areas. Concrete spillage or concrete discharge directly to groundwater or surface waters of the State is prohibited. At no time shall concrete be washed off into the footprint of an area where an infiltration BMP will be installed.
- i. Obtain written approval from Ecology before using chemical treatment other than CO<sub>2</sub>, dry ice, or food grade vinegar to adjust pH.
- j. Uncontaminated water from water-only based shaft drilling for construction of building, road, and bridge foundations may be infiltrated provided the wastewater is managed in a way that prohibits discharge to surface waters. Prior to infiltration, water from water-only based shaft drilling that comes into contact with curing concrete must be neutralized until pH is in the range of 6.5 to 8.5 (su).

### **Element 10: Control Dewatering**

- a. Discharge foundation, vault, and trench dewatering water, which have similar characteristics to stormwater runoff at the site, into a controlled conveyance system before discharge to BMP C240: Sediment Trap or BMP C241: Sediment Pond (Temporary).
- b. Discharge clean, non-turbid dewatering water, such as well-point groundwater, to systems tributary to, or directly into surface waters of the State, as specified in Element 8: Stabilize Channels and Outlets, provided the dewatering flow does not cause erosion or flooding of receiving waters. Do not route clean dewatering water through stormwater sediment BMPs. Note that “surface waters of the State” may exist on a construction site as well as off site; for example, a creek running through a site.
- c. Handle highly turbid or otherwise contaminated dewatering water separately from stormwater.
- d. Other dewatering treatment or disposal options may include:
  - i. Infiltration.
  - ii. Transport off site in a vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters.
  - iii. Ecology-approved on-site chemical treatment or other suitable treatment technologies.
  - iv. Sanitary or combined sewer discharge with local sewer district approval, if there is no other option.
  - v. Use of a sedimentation bag that discharges to a ditch or swale for small volumes of localized dewatering.

### **Element 11: Maintain BMPs**

- a. Maintain and repair all temporary and permanent erosion and sediment control BMPs as needed to ensure continued performance of their intended function in accordance with BMP specifications.
- b. Remove all temporary erosion and sediment control BMPs within 30 days after achieving final site stabilization or after the temporary BMPs are no longer needed.



### **Element 12: Manage the Project**

- a. Phase development projects to the maximum degree practicable and take into account seasonal work limitations.
- b. Inspect, maintain and repair all BMPs as needed to ensure continued performance of their intended function.
- c. Maintain, update, and implement the Construction SWPPP.
- d. Projects that disturb one or more acres must have site inspections conducted by a Certified Erosion and Sediment Control Lead (CESCL). Project sites disturbing less than one acre may have a CESCL or a person without CESCL certification conduct inspections. By the initiation of construction, the Construction SWPPP must identify the CESCL or inspector, who must be present on site or on-call at all times.

### **Element 13: Protect Low Impact Development BMPs (Infiltration BMPs)**

The project proponent must protect existing and proposed infiltration BMPs during construction. The primary purpose of On-Site Stormwater Management (often referred to as Low Impact Development, or LID) is to reduce the disruption of the natural site hydrology through infiltration. LID BMPs are permanent facilities.

- a. Protect all infiltration BMPs from sedimentation through installation and maintenance of erosion and sediment control BMPs on portions of the site that drain into the infiltration BMPs. Restore the BMPs to their fully functioning condition if they accumulate sediment during construction. Restoring the BMP must include removal of sediment and any sediment-laden soils within the BMP, and replacing the removed soils with soils meeting the design specification.
- b. Prevent compacting infiltration BMPs by excluding construction equipment and foot traffic. Protect completed lawn and landscaped areas from compaction due to construction equipment.
- c. Control erosion and avoid introducing sediment from surrounding land uses onto BMP F6.24: Permeable Pavement. Do not allow muddy construction equipment on the base material or pavement. Do not allow sediment-laden runoff onto permeable pavements.
- d. Permeable pavement fouled with sediments or no longer passing an initial infiltration test must be cleaned using procedures from the local stormwater manual or the manufacturer's procedures.
- e. Keep all heavy equipment off existing soils under infiltration BMPs that have been excavated to final grade to retain the infiltration rate of the soils.

### **4.3 Core Element #3: Source Control of Pollution**

Following construction, all new and redevelopment projects meeting the thresholds in Section 3. Applicability of the Core Elements shall apply all known, available, and reasonable Source Control BMPs.

Source Control BMPs shall be selected, designed, and maintained in accordance with Chapter 8 of the SWMMEW.

### **4.4 Core Element #4: Preservation of Natural Drainage Systems and Outfalls**

All new development and redevelopment projects meeting the thresholds in Section 3. Applicability of the Core Elements shall preserve and maintain natural drainage patterns to the maximum extent practicable at the site. Discharges from the Project Site shall occur at the natural location, to the maximum extent practicable.

The manner by which runoff is discharged from the Project Site must not cause a significant adverse impact to downstream receiving waters and down-gradient properties, and should be addressed as part of the off-site analysis described in the SWMMEW.

All outfalls must address energy dissipation. A project proponent who believes that energy dissipation should not be required for a new outfall must provide justification in the project's stormwater site plan.

### **4.5 Core Element #5: Runoff Treatment**

All new and redevelopment projects meeting the thresholds in Section 3. Applicability of the Core Elements shall apply Runoff Treatment BMPs in accordance with the following thresholds, standards, and requirements to remove pollutants from stormwater runoff.

#### ***Core Element Thresholds***

Each project that requires Core Element #5 (as detailed in Section 3. Applicability of the Core Elements) must be reviewed to determine if Runoff Treatment BMPs are required for the project to be in compliance with Core Element #5.

Note that it is possible for a project that triggers the thresholds for Core Element #5 per Section 3. Applicability of the Core Elements to not need Runoff Treatment BMP(s) to be in compliance with Core Element #5. If a project does not trigger either of the Core Element thresholds for Runoff Treatment BMPs, then the designer must document the areas within the project used to determine that neither of the Core Element thresholds are met. This documentation will demonstrate compliance with Core Element #5 for the project.

When assessing a project against the following thresholds, only consider the types of surfaces (e.g. new hard surfaces, replaced hard surfaces, converted vegetation areas) that are subject to Core Element #5, per the Project Thresholds in Section 3.

Applicability of the Core Elements.

The following projects require construction of Runoff Treatment BMPs. If a project meets either of the following thresholds, Runoff Treatment BMPs are required. The project proponent must demonstrate that the project does not meet either of the following thresholds for Runoff Treatment BMPs to not be required for the project.

- Projects that have a total of 5,000 square feet or more of pollution-generating hard surface (PGHS), or
- Projects that have a total of 3/4 of an acre or more of pollution-generating pervious surfaces (PGPS) – not including permeable pavements, and from which there will be a surface discharge in a natural or man-made conveyance system from the site.

### ***Runoff Treatment Performance Goal Thresholds***

#### **1a. Level 1 Oil Control**

Level 1 Oil Control BMPs are required for areas that typically generate high concentrations of oil due to high traffic turnover or the frequent transfer of oil. These types of areas include:

- An area of a commercial or industrial site subject to an expected average daily traffic (ADT) count equal to or greater than 100 vehicles per 1,000 square feet of gross building area, or 300 total trip ends per day.
- An area of a commercial or industrial site subject to petroleum storage and transfer in excess of 1,500 gallons per year, not including routinely delivered heating oil.
- An area of a commercial or industrial site subject to parking, storage or maintenance of 25 or more vehicles that are over 10 tons gross weight (trucks, buses, trains, heavy equipment, etc.).
- A road intersection with a measured ADT count of 25,000 vehicles or more on the main roadway and 15,000 vehicles or more on any intersecting roadway, excluding projects proposing primarily pedestrian or bicycle use improvements.

### **1b. Level 2 Oil Control**

Level 2 Oil Control BMPs are required for areas that generate sufficient quantities of oil to threaten water quality, but the quantities of oil generated may be insufficient for Level 1 Oil Control BMPs to be effective. These types of areas include:

- Any road with average daily traffic (ADT) > 30,000 vehicles
- Commercial on-street parking areas on streets with an expected total ADT of ≥ 7,500

### **2. Phosphorus Treatment**

Phosphorus Treatment BMPs are required for projects (or portions of projects) within watersheds that have been determined by local governments (e.g. through a lake management plan), Ecology (e.g. through a TMDL waste load allocation), or the USEPA to be sensitive to phosphorus and are being managed to control phosphorus. The following are examples of sources that the local government can use for determining whether a water body is sensitive to phosphorus:

- Those waterbodies reported under section 305(b) of the Clean Water Act, and designated as not supporting beneficial uses due to phosphorous or other water quality criteria related to excessive phosphorus;
- Those listed in Washington State's Nonpoint Source Assessment required under section 319(a) of the Clean Water Act due to nutrients.

### **3. Metals Treatment**

Metals Treatment BMPs are required for the types of project sites listed below that:

- a. discharge directly to fresh waters designated for aquatic life use or that have an existing aquatic life use; or
- b. discharge to conveyance systems that are tributary to fresh waters designated for aquatic life use or that have an existing aquatic life use; or
- c. infiltrate stormwater within ¼ mile of a fresh water designated for aquatic life use or that has an existing aquatic life use.

The types of project sites are:

- Sites subject to industrial activities,
- Commercial project sites,
- Multifamily residential project sites, and
- High AADT roads as follows:
  - Within Urban Growth Areas:

- Roads with an AADT of 7,500 or greater.
- Outside of Urban Growth Areas:
  - Roads with an AADT of 15,000 or greater
- Light rail elevated and non-elevated guideways/tracks
- Other project sites that are anticipated to generate a high pollutant loading, including:
  - Parking areas as follows:
    - Commercial or industrial areas: All on-street parking areas.
    - Areas other than commercial or industrial areas: On-street parking areas on streets with an expected total AADT of  $\geq 7,500$ .
    - Parking areas with an expected trip end count  $\geq 40$  vehicles per 1,000 sf of gross building area.
    - Parking areas with  $\geq 100$  expected trip ends per day.
  - Fueling stations
  - Log storage and sorting yards
  - Railroad yards
  - Transit center bus stops

The following areas of the above-listed project sites do not require Metals Treatment BMPs:

- Areas that discharge directly, or indirectly through a municipal separate storm sewer system, to a water listed in *Appendix 2-A: Basic Treatment Receiving Waters* in the SWMMEW.
- Landscaped areas of industrial, commercial, and multi-family project sites that do not involve any other pollution-generating sources (e.g. industrial activities, customer parking, storage of erodible or leachable material, wastes, or chemicals).
- Parking lots of industrial and commercial project sites, dedicated solely to parking of employees' private vehicles that do not involve any other pollution-generating sources (e.g. industrial activities, customer parking, storage of erodible or leachable material, wastes, or chemicals).

For project sites with a mix of land use types, Metals Treatment BMPs are required when the runoff from the areas subject to the Metals Treatment Performance Goal comprises 50% or more of the total runoff from the project site.

#### **4. Basic Treatment**

Areas that must provide Phosphorus Treatment BMPs or Metals Treatment BMPs do NOT have to provide additional Basic Treatment BMPs to meet the Basic Treatment Performance Goal.

If Phosphorus Treatment BMPs or Metals Treatment BMPs are not provided, Basic Treatment BMPs are required before discharging runoff off site through either infiltration or surface flow.

For project sites with a mix of land use types, Basic Treatment BMPs are required when the runoff from the areas subject to the Basic Treatment Performance Goal comprises 50% or more of the total runoff to a discharge location.

#### ***Runoff Treatment BMP Sizing***

Size Runoff Treatment BMPs for the entire area that drains to them, even if some of those areas are not pollution-generating, or were not included in the Project Thresholds decisions.

Runoff Treatment BMPs are sized by using either a volume (the Water Quality Design Volume) or a flow rate (the Water Quality Design Flow Rate), depending on the Runoff Treatment BMP selected. Refer to the selected Runoff Treatment BMP to determine whether the BMP is sized based on a volume or a flow rate. See below for details about the Water Quality Design Volume and the Water Quality Design Flow Rate used to size Runoff Treatment BMPs.

#### **Water Quality Design Volume**

The Water Quality Design Volume is the same whether the Runoff Treatment BMP is located upstream or downstream of Detention BMPs.

Each agency or local jurisdiction should specify which of the following methods will be used in their jurisdiction to determine the Water Quality Design Volume. If the jurisdiction has not identified a preferred method, the default method shall be Method 1 in Climate Regions 1 and 4, and Method 2 in Climate Regions 2 and 3.

- **Method 1:** The volume of runoff predicted for the proposed development condition from the regional storm (72-hour) with a 6-month return frequency. An alternative to this method is the modified Type IA storm with a 6-month return frequency described in *Chapter 4 - Hydrologic Analysis and Design* in the SWMMEW. Designers may use this alternative method on small projects where the designer's software does not accept storms longer than 24 hours.
- **Method 2:** The volume of runoff predicted for the proposed development condition from the SCS Type IA 24-hour storm with a 6-month return frequency.

- **Method 3:** In Climate Regions 2 and 3, volume-based Runoff Treatment BMPs may be sized for 0.5-inch predicted runoff produced for the proposed development condition from all impervious surface areas that contribute flow to the Runoff Treatment BMP. This method is modified for design of BMP T5.21: Infiltration Swales.
- **Method 4:** The volume of runoff predicted for the proposed development condition from the SCS Type II 24-hour storm with a 6-month return frequency.
- **Method 5:** Another sizing approach and criteria based on peer-reviewed methods and supported by local data that meet the objective of treating at least 90% of the average annual runoff volume from the site.

**Snowmelt considerations:** Snowmelt should be considered when determining the Water Quality Design Volume. This is especially important in Climate Regions 1 and 4 and also applies to other areas of eastern Washington. Check for local requirements. A snowmelt factor based on the water content of the average annual daily depth of snow (or based on some other appropriate measurement) should be added to the depth of precipitation when calculating the Water Quality Design Volume, or another method described in *Chapter 4 - Hydrologic Analysis and Design* in the SWMMEW may be used.

#### **Water Quality Design Flow Rate**

The Water Quality Design Flow Rate is dependent on the location of the Runoff Treatment BMP relative to Detention BMP(s):

- *Upstream of Detention BMPs or when there are no Detention BMPs:*  
Each agency or local jurisdiction should specify which of the following methods will be used in their jurisdiction to determine the Water Quality Design Flow Rate Preceding Detention BMPs. If the jurisdiction has not identified a preferred method, the default method shall be Method 1 in all climate regions. For large Runoff Treatment BMPs receiving inflow from multiple sources, the flow rate generated by the regional or SCS Type IA storm should also be checked.
  - **Method 1:** The runoff flow rate predicted for the proposed development condition from the short-duration (3-hour) storm with a 6-month return frequency. (Use 15-minute time steps, unless otherwise specified in the BMP design guidance.)
  - **Method 2:** The runoff flow rate predicted for the proposed development condition from the SCS Type II 24-hour storm with a 6-month return frequency. (Use 15-minute time steps, unless otherwise specified in the BMP design guidance.)
  - **Method 3:** The runoff flow rate for the proposed development condition calculated by the Rational Method using the 2-year mean recurrence interval. This method may only be used to design facilities based on instantaneous peak flow rates.

- *Downstream of Detention BMPs:* The Water Quality Design Flow Rate shall be the full 2-year release rate from the Detention BMP.

### ***Runoff Treatment BMP Selection, Design, and Maintenance***

Runoff Treatment BMPs shall be:

- Selected in accordance with the process identified in *6.1.2 Choosing Your Runoff Treatment BMPs* in the SWMMEW,
- Designed in accordance with the design criteria in Chapter 6 of the SWMMEW, and
- Maintained in accordance with the maintenance criteria in Chapter 6 of the SWMMEW.

### ***Bypass Requirements***

A bypass must be provided for all Runoff Treatment BMPs unless the BMP is able to convey the 25-year short-duration storm without damaging the BMP or dislodging pollutants from within it. Extreme runoff events may produce high flow velocities through BMPs that can damage and or dislodge pollutants from within the facility. The designer must: check the maximum allowable velocity (typically less than 2 ft/s) or shear stress specified for the BMP; and implement a flow bypass as necessary to prevent exceeding these velocities. Bypass is not recommended for wet ponds, constructed wetlands, and similar volume-based Runoff Treatment BMPs; inlet structures for these BMPs should be designed to dampen velocities; the pond dimensions will further dissipate the energy.

## **4.6 Core Element #6: Flow Control**

All new and redevelopment projects meeting the thresholds in Section 3. Applicability of the Core Elements shall apply Flow Control BMPs in accordance with the following thresholds, standards, and requirements to reduce the impacts of stormwater runoff from hard surfaces and land cover conversions.

### ***Core Element Exemption***

Flow Control is not required for projects that discharge directly to, or indirectly through an MS4 to a water listed in *Appendix 2-C: Flow Control Exempt Receiving Waters* in the SWMMEW, subject to all of the following restrictions:

- Stormwater runoff should not be diverted from the project area to an existing wetland, stream, or near-shore habitat sufficient in quantities large enough to result in significant adverse impact. Adverse impacts are expected from uncontrolled flows causing a significant increase or decrease in the 1.5-to 2-year peak flow rate.



- The project must be drained by a conveyance system that is comprised entirely of manmade conveyance elements (e.g. pipes, ditches, outfall protection). The conveyance system must extend to the ordinary high water line of the exempt receiving water, or (in order to avoid construction activities in sensitive areas) flows are properly dispersed before reaching the buffer zone of the sensitive or critical area.
- The conveyance system between the project and the exempt receiving water shall have sufficient hydraulic capacity to convey discharges from future build-out conditions (under current zoning) from contributing areas of the Site, and the existing condition from contributing off-site areas.
- Any erodible elements of the manmade conveyance system must be adequately stabilized to prevent erosion under the conditions noted above.

Additionally, the following projects do not need to provide additional Flow Control BMPs to comply with this Core Element:

- Any project able to disperse (i.e. by using BMP F6.42: Full Dispersion), without discharge to surface waters, the total 25-year runoff volume for the proposed development condition on property that is under the functional control of the project proponent.
- A road project able to disperse (i.e. by using BMP F6.42 Full Dispersion), without discharge to surface waters, the total 25-year runoff volume for the proposed development condition on land for which this use has been specifically authorized by the controlling entity.
- A project discharging to stream reaches consisting primarily of irrigation return flows and not providing habitat for fish spawning and rearing.
- A project located at a site with less than 10 inches of average annual rainfall that discharges to a seasonal stream that is not connected via surface flow to a nonexempt surface water by runoff generated by the 2-year Type IA design storm.
- A project that discharges to a stream that flows only during runoff-producing events. The runoff carried by the stream following the 2-year regional storm in Climate Regions 1 and 4, or the Type IA storm in Climate Regions 2 and 3, must not discharge via surface flow to a nonexempt surface water. The stream may carry runoff during an average annual snowmelt event but must not have a period of base flow during a year of normal precipitation.

### ***Core Element Thresholds***

Each project that requires Core Element #6 (as detailed in Section 3. Applicability of the Core Elements) must be reviewed to determine if Flow Control BMPs are required for the project to be in compliance with Core Element #6.

Note that it is possible for a project that triggers the thresholds for Core Element #6 per Section 3. Applicability of the Core Elements to not need Flow Control BMP(s) to be in compliance with Core Element #6. If a project does not trigger either of the Core Element thresholds for Flow Control BMPs, then the designer must document the areas within the project used to determine that neither of the Core Element thresholds are met. This documentation will demonstrate compliance with Core Element #6 for the project.

When assessing a project against the following thresholds, only consider the types of surfaces (e.g. new hard surfaces, replaced hard surfaces, converted vegetation areas) that are subject to Core Element #6, per the Project Thresholds in Section 3. Applicability of the Core Elements.

The following projects require construction of Flow Control BMPs to achieve the Flow Control Performance Standard. If a project meets any of the following thresholds, Flow Control BMPs are required. The project proponent must demonstrate that the project does not meet any of the following thresholds for Flow Control BMPs to not be required for the project.

- Projects that have a total of 10,000 square feet or more of effective impervious surfaces, or
- Projects that convert  $\frac{3}{4}$  acres or more of native vegetation, pasture, scrub/shrub, or unmaintained non-native vegetation to lawn or landscape, or convert 2.5 acres or more of native vegetation to pasture, and from which there is a surface discharge in a natural or man-made conveyance system from the project, or
- Projects that through a combination of effective hard surfaces and converted vegetation areas cause a 0.15 cubic feet per second (cfs) or greater increase in the runoff for the 25-year, 24-hour, storm event (using a 15-minute time-step).

The 0.15 cfs increase should be a comparison of the post project runoff to the existing condition runoff. For the purpose of applying this threshold, the existing condition is either the pre-project land cover, or the land cover that existed at the site as of a date when the local jurisdiction first adopted Flow Control requirements into code or rules.

### ***Flow Control Performance Standard***

Projects must limit the peak release rate of the post-developed 2-year, 24-hour peak flow to 50% of the pre-developed 2-year, 24-hour peak flow and maintain the pre-developed 25-year, 24-hour peak runoff rate. Check the 100-year, 24-hour event for downstream flooding and property damage.

Additionally, the 10-year, 24-hour rainfall event must be retained on-site without any discharge to the MS4.

The above requirements must be demonstrated using a single-event model.

The pre-developed condition used for the analysis shall be the existing land cover.

### ***Alternative Flow Control Performance Standard***

An alternative Flow Control Performance Standard may be established through application of watershed-scale hydrologic modeling and supporting field observations. Possible reasons for an alternative Flow Control Performance Standard include:

- Establishment of a stream-specific threshold of significant bedload movement other than the assumed 50% of the 2-year peak flow;
- Zoning and Land Clearing Ordinance restrictions that, in combination with an alternative Flow Control Performance Standard, maintain or reduce the naturally occurring erosive forces on the stream channel; or
- A duration control standard is not necessary for protection, maintenance, or restoration of designated and existing beneficial uses or Clean Water Act compliance.

See the SWMMEW for details on how an Alternative Flow Control Performance Standard may be established.

### ***Additional Requirement***

Flow Control BMPs shall be selected in accordance with *6.1.3 Choosing Your Flow Control BMPs*, and designed and maintained in accordance with Chapter 6 of the SWMMEW.

## 4.7 Core Element #7: Operation and Maintenance

All new and redevelopment projects meeting the thresholds in Section 3. Applicability of the Core Elements shall create an operation and maintenance (O&M) manual for all BMPs used to meet 4.5 Core Element #5: Runoff Treatment, 4.6 Core Element #6: Flow Control, and/or 4.8 Core Element #8: Wetlands Protection.

The O&M manual shall identify:

- Maintenance requirements that are consistent with the provisions in Chapter 6 of the SWMMEW,
- The party (or parties) responsible for operation and maintenance, and
- A long-term funding mechanism that will support the operation and maintenance.

For private facilities approved by the Permittee, a copy of the O&M manual shall be retained on site or within reasonable access to the site, and shall be transferred with the property to the new owner. For public facilities, a copy of the O&M manual shall be retained in the appropriate department.

A log of maintenance activity that indicates what actions were taken shall be kept and be available for inspection by the local government.

## 4.8 Core Element #8: Wetlands Protection

All new and redevelopment projects meeting the thresholds in Section 3. Applicability of the Core Elements shall include Stormwater Management BMPs in accordance with the following thresholds, standards, and requirements to reduce the impacts of stormwater runoff to wetlands.

### ***Core Element Thresholds***

This Core Element applies only to projects whose stormwater discharges into a wetland, either directly or indirectly through a conveyance system.

### ***Levels of Wetland Protection***

The following Levels of Wetland Protection are further explained in *Appendix 2-D: Wetland Protection Guidelines* in the SWMMEW.

### **General Protection**

General Protection includes general practices that benefit wetlands of all types.

### **Protection from Pollutants**

Protection from Pollutants includes measures to protect the wetland from pollutants in stormwater runoff. Measures of protection include Construction Stormwater BMPs, Source Control BMPs, LID practices and principles, and Runoff Treatment BMPs.

### **Wetland Hydroperiod Protection**

Wetland Hydroperiod Protection includes measures to avoid excessive hydrologic alteration of existing wetlands from development.

### ***Additional Requirements***

Stormwater Management BMPs shall not be built within a wetland or its buffer, except for:

- Necessary conveyance systems as approved by the Permittee; or
- As allowed in 2-D.6 Compensatory Mitigation of Wetlands in the SWMMEW.

## **Section 5. Adjustments**

Adjustments to the Core Elements may be granted by the Permittee provided that written findings of fact are prepared that address the following:

- The adjustment provides substantially equivalent environmental protection.
- Based on sound Engineering practices, the objectives of safety, function, environmental protection, and facility maintenance are met.

## **Section 6. Exceptions/Variations**

Exceptions/variances (exceptions) to the Core Elements may be granted by the Permittee following legal public notice of an application for an exception or variance, legal public notice of the Permittee's decision on the application, and written findings of fact that document the Permittee's determination to grant an exception. Permittees shall keep records, including the written findings of fact, of all local exceptions to the Core Elements.

The Permittee may grant an exception to the Core Elements if such application imposes a severe and unexpected economic hardship. To determine whether the application imposes a severe and unexpected economic hardship on the project applicant, the Permittee must consider and document, with written findings of fact, the following:

- The current (pre-project) use of the Site, and
- How the application of the Core Element(s) restricts the proposed use of the Site compared to the restrictions that existed prior to the adoption of the Core Elements; and
- The possible remaining uses of the Site if the exception were not granted; and

- The uses of the Site that would have been allowed prior to the adoption of the Core Elements; and
- A comparison of the estimated amount and percentage of value loss as a result of the Core Elements versus the estimated amount and percentage of value loss as a result of requirements that existed prior to adoption of the Core Elements; and
- The feasibility for the owner to alter the project to apply the Core Elements.

In addition, any exception must meet the following criteria:

- The exception will not increase risk to the public health and welfare, nor be injurious to other properties in the vicinity and/or downstream, and to the quality of waters of the state; and
- The exception is the least possible exception that could be granted to comply with the intent of the Core Elements.

## **Section 7. Altering the Core Elements with Basin Plans**

Basin Plans provide a mechanism by which the Core Elements and implementing BMPs can be evaluated and refined based on an analysis of a basin or watershed. Basin Plans may be used to develop control strategies to address impacts from future development and to correct specific problems whose sources are known or suspected. Basin Plans can be effective at addressing both long-term cumulative impacts of pollutant loads and short-term acute impacts of pollutant concentrations, as well as hydrologic impacts to streams, wetlands, and groundwater resources.

Basin Plans may be used by the Permittee to revise the default standards of the following Core Elements:

- 4.5 Core Element #5: Runoff Treatment,
- 4.6 Core Element #6: Flow Control, and/or
- 4.8 Core Element #8: Wetlands Protection.

In order for a Basin Plan to serve as a means of revising the standards of one or more of the Core Elements listed above, the following conditions must be met:

- The Basin Plan must be formally adopted by all jurisdictions with responsibilities under the plan; and
- All ordinances or regulations called for by the Basin Plan must be in effect; and
- The Basin Plan must be reviewed and approved by Ecology.

Basin Plans may also be used to demonstrate an equivalent level of Runoff Treatment, Flow Control, and/or wetland protection through the construction and use of regional stormwater facilities.

Basin Plans will require the use of modeling software and field work to verify and support the models. Permittees who are considering the use of Basin Plans to revise the default standards of one or more of the Core Elements are encouraged to contact Ecology early in the planning stage.

Some examples of how Basin Plans can alter the Core Elements are given in within the guidance for each Core Element in the SWMMEW. See *2.4 Core Elements (CEs)* in the SWMMEW.

DRAFT